AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

Claim 1. **Cancelled**

Claim 2. **Cancelled**

Claim 3. **Cancelled**

Claim 4. **Cancelled**

Claim 5. **(Currently Amended)** ~~The method as claimed in claim 3 further comprising~~ A method for protecting an avalanche photodiode (APD) of an optical receiver from overload optical signals, comprising:

providing a feedback control loop for controlling a gain of the photodiode by measuring an optical power incident the photodiode, and computing and applying an optimal gain setting in accordance with changes in the measured optical power;

using the measured optical power to detect a potential overload state in which the photodiode is susceptible to optical overload;

controlling the feedback control loop so that if the potential overload state is detected, the feedback control loop is preempted and a predetermined safe gain setting is applied to the photodiode by a bias control circuit that modulates a reverse bias voltage across a depletion region of the APD; and

determining that the measured optical power indicates that the photodiode is susceptible ~~of~~ to overload when the measured optical power falls below a threshold that is associated with a loss of signal condition during which no signal is received at the photodiode.

Claim 6. **(Original)** The method as claimed in claim 5 wherein overriding the feedback control loop to apply the predetermined safe gain setting to the APD comprises setting the reverse bias voltage to a predefined low sensitivity gain setting throughout the loss of signal condition.

Claim 7. **Cancelled**

Claim 8. **Cancelled**

Claim 9. **Cancelled**

Claim 10. **Cancelled**

Claim 11. **Cancelled**

Claim 12. **Cancelled**

Claim 13. **(Currently Amended)** ~~The apparatus as claimed in claim 12~~ An apparatus for protecting a variable gain avalanche photodiode (APD) of an optical receiver from overload optical signals, the apparatus comprising:

a feedback control circuit comprising a bias control circuit that modulates a reverse bias voltage across a depletion region of the photodiode for controlling a gain of the photodiode in response to an operating parameter of the photodiode;

a state detector comprising an optical power monitor that computes an optical power incident the photodiode for detecting if the operating parameter indicates that the photodiode is in a potential overload state in which the photodiode is susceptible to overload, and for issuing an override command over the feedback control circuit to apply a predetermined safe gain setting to the photodiode when the potential overload state is detected; and

wherein the state detector computes a mean optical power incident the photodiode, and determines that the photodiode is in a potential overload state if the computed optical power falls below a loss of signal threshold that is associated with a loss of signal condition.~~during which no optical signal is received.~~

Claim 14. **Cancelled**

Claim 15. **(Original)** The apparatus as claimed in claim 14 wherein the state detector also issues a command to the photodiode to fix a sensitivity of the photodiode to the predetermined safe gain setting in the event that the state detector determines that the measured optical power falls below the LOS threshold.

Claim 16. **(Currently Amended)** The apparatus as claimed in claim 13 wherein the state detector determines that the measured optical power indicates that the photodiode is susceptible ~~of~~ to overload when the computed optical power is above an overload threshold that is associated with an overload condition.

Claim 17. **(Original)** The apparatus as claimed in claim 16 wherein the state detector issues a command to the photodiode to deactivate the photodiode when the computed optical power is above the overload threshold.

Claim 18. **(Original)** The apparatus as claimed in claim 17 wherein the state detector raises an alarm that must be cleared by network management after deactivating the photodiode.

Claim 19. **Cancelled**

Claim 20. **Cancelled**